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ABSTRACT

This paper documents the steps taken by Christopher Newport University (CNU) (Virginia) as it planned and implemented a World Wide Web-based education program in 1998-99. The paper begins by providing an overview of the context for distance education at CNU and detailing the history of both the institution and distance education. Next, the rationale that prompted CNU to invest time and resources into developing a Web-based education program, as well as the evaluation of different program options, is covered. Program implementation is then addressed, including training and support systems. Problems encountered are summarized, and the program's next steps and further directions are considered. (MES)

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Getting from there to here:

How to (successfully) go from planning to implementing a web-based education program

ED 436 112

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Introduction

Institutions do not lightly make the decision to develop a web-based education program. Whether the underlying rationale rests in expanding an institution's reach, providing new services, or keeping up with students' shifting needs, once a decision *is* made, an array of activities must be undertaken to maximize the program's success. These activities involve the cooperation of all campus populations--faculty, administrators, technical support personnel, and students--and typically take place within a stated time frame.

In this paper, we document the steps taken by Christopher Newport University (CNU) as it planned and implemented a web-based education program in 1998-99. We begin by documenting the context for distance education at CNU, and detail the history of both the institution and distance education. Next, we describe the rationale that prompted CNU to invest time and resources into developing a web-based education program, as well as the evaluation of the different program options we had. We discuss the implementation of the program, including the training we conducted and the support systems we put into place. As all best-laid plans encounter problems, we provide an account of the ones we have come across. Finally, we take a look ahead and describe the program's next steps and future directions.

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Institutional Background:

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Named after the sea captain who piloted the Virginia Company's early seventeenth century expeditions, Christopher Newport University was established in 1960 as a two-year branch of the College of William and Mary. In 1971, CNU became a four-year baccalaureate degree granting institution, and six years later, CNU became totally independent of the College of William and Mary. CNU now occupies over 100 acres in Newport News, Virginia. Today, the university enrolls approximately 4,000 undergraduate and 1,000 graduate students.

CNU's original mission closely revolved around meeting the needs of an older, commuter population, many of whom had work and family responsibilities that competed with their student lives. Over the past five years, however, CNU has been aggressively pursuing residential students and students of the traditional college-going age. The university built its first dormitory in 1994, and ground was broken in February, 1999 for the second dormitory. Considerable attention and energy within the administration focuses on developing campus-based resources, such as a new gymnasium and fine arts center, to attract and retain a qualified, residential student body.

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CNU Online:

Christopher Newport University's distance education program, CNU Online, began as a faculty-initiated effort in the early 1990s. Initially, one faculty member in the Department of Philosophy and Religious Studies began to use a shareware bulletin board-based system to support his on-campus classes. The bulletin board proved to be welcome by the students. In 1991, one telephone line and an IBM 8088 were enough to support the users. By the fall semester of 1992, however, the number of telephone lines had to be expanded to five to meet the increasing demand, while the bulletin board relied on an IBM 486 that used PCBOARD software. In the fall of 1993, faculty members from the Department of Government and Public Administration became interested in the system. The Government and Philosophy departments jointly operated the online program as an experiment in 1993.

In 1994, the Government and Philosophy departments successfully obtained funds from the Virginia General Assembly to officially establish a two-year online trial program dubbed CNU Online. During this period, CNU Online was required to demonstrate the equivalency of instruction and student learning between online and on-campus courses. A series of qualitative and quantitative analyses confirmed that there were no measurable differences in student learning that related to the format of instruction.

With this information, the General Assembly approved CNU's online program and CNU Online opened up its doors as a distance education program independent of department sponsorship in 1996. At this time, the bulletin board system was replaced by FirstClass, a message based system that required the installation of client software. Over the past three years, enrollments have continued to increase each semester, as have the number of online courses offered. CNU Online now provides more than 50 online courses to 660 students each semester, which is approximately one in seven students at CNU. Two complete degree programs are available online--a bachelor of science degree in Government and Public Administration, and a bachelor of arts degree in Philosophy and Religious Studies. In addition to the online courses, the system is used to support on-campus instruction and hosts a campus-wide electronic town hall.

Like the situation at many other institutions, most CNU Online students (approximately 88%) live within commuting distance of campus. Another nine percent live in-state, but outside of the immediate area, and another three percent of students live out-of-state. For most of our online students, then, it is the convenience that comes from time-shifting school work that serves as a major incentive for participation, and not the distance between home and campus per se.

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Rationale for changing to a web-based system:

By 1998, Christopher Newport University's online education program had established a presence among faculty and students alike. A cadre of faculty members representing core disciplines was comfortable using the FirstClass system, as were the online students. The increase in the number of courses and students each semester indicated that the existing online program was a success. But in early 1998, despite the considerable investment of time and resources, CNU's administration decided to abandon the existing message-based system and adopt a web-based format. What factors contributed to that decision?

Three issues underpinned Christopher Newport University's resolve to introduce a web-based system to campus. First, practically speaking, moving to a web-based system would allow CNU Online support staff to use their time more effectively. With the FirstClass system, a large proportion of CNU Online's energies each semester was directed at mailing out software to students and troubleshooting problems that stemmed from installing and updating the software. By curtailing these two activities, support staff could direct their attention to other key areas that previously had been shortchanged (e.g., helping faculty create course materials). Second, the web permits a more sophisticated use of instructional resources than could be found with a message-based system. Instructors could add sound and video files to their courses, create links to other web resources, and incorporate a graphical interface for the students. Finally, the continued popularity of the web requires that CNU take advantage of it for instruction. A web-based system would be familiar to a large population and allow an easy migration for incoming students. In order for CNU to remain competitive in the increasingly crowded marketplace of online education, it had to respond to the very real expansion in web use.

The decision to move to a web-based system stemmed from the administration from CNU and initially was not well received by faculty. Most online faculty members at CNU are not given release time to prepare for their online courses, and were understandably upset at the prospect of having to spend extra time to learn a new system and create a host of new materials. One of our main concerns, then, as we began to evaluate different web-based packages in April, 1998 was how to garner faculty support for the new system.

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Evaluating and selecting a web-based system:

An ad hoc committee composed of faculty members and CNU Online staff assembled a list of seven criteria that would be used in evaluating the number of web-based systems that were on the market. The first criterion was that the new program must be able to incorporate audio and video technology, to accommodate the interests of faculty members who wished to add new features to their courses. Second, the new program must not involve the installation of specialized software. As mentioned above, responding to software installation problems constituted a considerable drain on CNU Online staff time and prevented us from working on other tasks. The third criterion we employed is that the new system must be suited for both Mac's and PC's. That is, we did not want to dictate a particular platform to our online students and faculty. Fourth, we wanted to select a company with good technical support. CNU Online is dedicated to offering a system that is available 24 hours, 7 days a week, and we expect nothing less from the companies with which we work. A fifth criterion was that the new system should not require students to have high end computers of their own, since we wanted to be sensitive to the financial realities of our students. Sixth, we needed to make sure that the faculty learning curve for mastering the new system would be minimal, to respond to our faculty's tight schedules. Finally, the new system ideally would run off a unix server, which would permit remote administration, and have secure login capability.

Of the various web-based systems we identified, we subjected four of them for in-depth consideration, using our list of criteria. At this point we should say that our evaluation of these products reflects CNU's particular needs and likes, and that other institutions might come to very different conclusions about the systems' suitability. We realize also that more recent versions of the programs listed below might already have addressed the limitations we identified.

In our evaluation, we considered Web Course In a Box, CourseInfo, Top Class, and WebCT. Each system had its own strengths and weaknesses. We found that Web Course In a Box did not include the administrative tools we required. Although CourseInfo did have a suitable array of administrative tools, it did not offer faculty the flexibility in course design they wanted. Top Class received high points for its administrative and course design tools, but lacked search and sort tools, a major flaw for our faculty.

In going through these initial reviews, we realized that our list of criteria had to be expanded to reflect three other, critical needs. First, we needed the system to manage all courses in one course containment area. Second, the new system really had to have superlative administrative tools for maintenance and management. Finally, the new system had to incorporate search and sort tools.

With this reconsideration of the criteria, we found that WebCT met our needs most closely, although it certainly had its own limitations. The greatest advantage offered by WebCT, we felt, was its large user base and active user group, which have provided essential information for our own trouble-shooting. Also, we found that the support we received from WebCT prior to our purchasing a license was far better than the reactions we received from other companies. In July, 1998, approximately three months after we established our initial list of criteria, our ad hoc selection committee assembled and voted to purchase the WebCT program. Our attention next turned to the very practical matter of getting the program up and running by the Spring, 1999 semester.

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Implementation:

Our implementation activities can be divided into two distinct periods: the four months prior to WebCT's January, 1999 debut, and the time after we began using it for our online courses. Prior to WebCT's debut, we focused on training as many of our faculty and support staff as we could, and concentrated on information that was at the core of the online courses: communication tools, course administration, and course content.

We were particularly concerned about our online faculty, many of whom had busy schedules. Our main fear was that faculty members would wait until the end of the semester to learn the system, and would descend full force upon the CNU Online support staff just as our attention was shifting to addressing the needs and questions of our online students. For this reason, once we decided to purchase WebCT we immediately began hosting regular training sessions directed at faculty. At the beginning of the Fall semester, we hired an outside consultant to lead a two-day training session that was attended by approximately 20 faculty members (about one-half of our online faculty). We also put together a special weekend session for adjunct faculty members to respond to the concern of full-time faculty. Apart from the training, we offered weekly, one-hour sessions on different WebCT topics, which were poorly attended. We attended faculty meetings to answer questions, and also communicated information electronically throughout the Fall 1998 semester. To supplement the faculty training, we put together two, 90-minute sessions for support staff in the departments that sponsor the online courses.

One other concern was to alert our current students about the change in the online system that was about to take place. To this end, at the beginning of the Fall 1998 semester we created an open course for students

to explore and posted messages encouraging students to consult it. On this site, students could also create messages discussing the new system.

Toward the close of 1998, we began to focus more on our online students. We sent instructions for using the new system to all students in December, which meant that those students would have one month to get acquainted with WebCT. During the first two weeks of the Spring 1999 semester, CNU Online offered hour-long training sessions twice daily that were well attended. Our telephone help desk, which is staffed from 8 am to 10 pm weekdays and four hours each on Saturday and Sunday, also handled questions from online students. In general, we found that the number of questions to our office dramatically decreased with the introduction of WebCT. The free time meant that we could address other needs, including faculty support.

At the beginning of the Spring 1999 semester, faculty needs were much different. Instead of questions about different tools, faculty concerns revolved around preparing and uploading course content. We responded by providing assistance in scanning, reformatting, and uploading course files, such as course syllabi and class lectures. In addition, we helped create quizzes from online instructors' test banks of questions.

One other area involved with implementation of WebCT deserves mention. To prepare for WebCT, we needed to establish a stable technical infrastructure. To balance the potential for program expansion with our fiscal reality, we decided to purchase a server that was as high end as we could afford. We opted to use a Sun Ultra II server, which we already had available, upgraded the memory to 256K, and purchased a second internal drive to allow us to mirror the system disk. We attached a Raid 5 SCSI disk array and a 10-tape library backup system, put a Gigabit network card into the server, and placed it on a Gigabit switch. By the time our students were coming on line, the system was up and running.

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Problems encountered so far:

At the point of this paper's writing, we are now two months into the semester. Lest the above description give the impression that all has been smooth and seamless, we would like to describe three main problems we have encountered. One area that has been deficient has been in the communication about WebCT. We discovered that the literature we disseminated to our online students lacked all the information they needed. For example, instructions for how to print online course material was left out of the student manuals we distributed. Another communication problem was that many of our online students were unaware of the change to WebCT, and became confused when, on the first day of the semester, they tried logging onto the old system. Despite our efforts to spread the word, students were still caught unaware.

A second problem area has been keeping up with faculty needs. Although we led training sessions that addresses WebCT basics, we did not cover the more advanced WebCT tools, such as course management and quiz creation. We remedied this by hosting a second round of training in early February and by developing a step-by-step manual for quizzes. As faculty members become more conversant in WebCT, the complexity of their questions increases, and we have had to spend more time than we had anticipated answering questions about advanced features. We also have been sorely taxed by the sheer volume of converting course content for online courses. CNU Online's policy is that our support staff is willing to assume the burden of creating course materials in order to relieve faculty from the more mundane tasks of scanning materials and reformatting and uploading files. Faculty have not been shy about asking us to assist them. We have tried to circumvent problems by requesting that faculty members provide us with the information at least five days before they need it uploaded, but not all faculty have respected this.

A third difficulty we have run across rests with the speed of our server. Online traffic is at a peak between 11 am and 3 pm, and online faculty and students have had to endure very slow speeds during this period. We purchased additional equipment in February and continue to tweak the system, but there are still times when the system's slowness frustrates users.

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Next Steps:

Once this first semester with WebCT is over, we will direct our energies at addressing four goals for the 1999-2000 academic year. Our first goal is to improve training and information dissemination. To this end, we plan to develop online training modules for students and develop a student tip page that describes typical problems and their solutions. The training of CNU Online staff is also a part of this first goal: CNU Online's administrative staff has not received any training beyond the two-day session hosted by the consultant in the Fall 1998 semester.

CNU Online's second goal for the upcoming school year is to expand the number of departments and faculty members participating in the online program, as well as the range of applications available to faculty and students. CNU Online has depended on the same core departments and faculty for the past several years. There is a perception on campus that the online program is the pet project of its most enthusiastic users (the Government and Philosophy departments), which may prevent other departments and faculty members from becoming involved. Although this appears strange, the online program primarily supports online classes. That is, other faculty do not see the benefit of incorporating online components into their campus-based instruction (e.g., to post course syllabi, notes, calendar). One of our aims, then, is to develop other uses for the online program. To date, we have fashioned an electronic town hall for faculty members across the university to use, and are discussing creating an online site for the campus' writing center.

Our third goal is to push the envelope of uses among our online faculty members. Understandably, faculty members have been straightforward with their uses of WebCT, and have relied extensively on text and messaging, the same basic features of the system we abandoned in favor of WebCT. Over the next year, then, we will work to encourage faculty members to incorporate graphics, video, and sound into their courses.

Finally, we will strive to extend our student base. At this time, the majority of our online students live within commuting distance of campus. We would like to attract in-state students (who would appreciate the in-student tuition rates) living outside of commuting distance to the online program. To do this, we have to dedicate resources to develop a marketing plan and determine a way to reach these students.

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Conclusion:

The online program at Christopher Newport University has experienced consistent growth from its inception in the early 1990s. We are not naïve enough to assume that our recent migration to a web-based system will be our last, but hope that our recent experiences will allow us to make future decisions with confidence. The process of making a transition to a new system is a difficult one for all parties involved. Based on the situations, dilemmas, and solutions we encountered, we maintain that establishing clear communication channels and training provides the strongest foundation for an online program's success.

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